IN THE CLAIMS

1. (original) A control station for two-way satellite communication, comprising:

an RF section for transmitting a broadcast signal and receiving a return channel uplink;

a plurality of burst channel demodulators for demodulating the return channel uplink;

a timing section including a delay receiver, an echo timing receiver, and a timing processor receiving outputs from the delay receiver and the echo timing receiver;

a frame pulse generator coupled to the plurality of burst channel demodulators and the timing section, wherein the frame pulse generator provides a superframe marker pulse to the timing section at a first fixed time interval and concurrently provides a superframe header which is included in the broadcast signal, wherein the frame pulse generator pulses the plurality of burst channel demodulators at a second fixed time interval different from the first fixed time interval and at a time later than a time of the superframe marker pulse by a space timing offset interval.

2. (original) The control station of claim 1, wherein the space timing offset interval is approximately equal to a maximum round-trip time from a furthest receiver plus two frame duration intervals.

3. (original) The control station of claim 1, wherein the first fixed time interval is equal to an integral number of frame duration intervals.

4. (original) The control station of claim 3, wherein the integral number of frame duration intervals is equal to eight.

5. (original) The control station of claim 1, wherein the second fixed time interval is approximately 45 msec.

6. (original) The control station of claim 1, wherein a frame duration time interval is approximately equal to the second fixed time interval.

7. (original) The control station of claim 6, wherein the frame duration time interval is approximately 45 msec.

8. (original) The control station of claim 1, wherein the broadcast signal is an asynchronous DVB transport stream.

9. (original) The control station of claim 1, wherein the return channel uplink is a TDMA signal.

10. (canceled).

11. (previously presented) A transceiver for transmitting a frame synchronized message, comprising:

a receiver which detects a frame reference marker and a control node timing message in a received broadcast signal;

a local clock adapted to tag the detected frame reference marker with a local reception time;

a timing recovery section which uses the control node timing message to determine a transmit frame start time; and

a transmitter adapted to uplink a message during an assigned period after the transmit frame start time,

wherein the timing recovery section uses the local reception time and local offset time to determine the transmit frame start time.

12. (previously presented) The transceiver of claim 11, wherein the timing recovery section compensates for satellite drift.

13. (previously presented) The transceiver of claim 11, wherein the control node timing message provides timing information for a previously transmitted frame reference marker.

14. (previously presented) The transceiver of claim 11, wherein the timing recovery section is adapted to correct for a space timing offset.

15. (previously presented) The transceiver of claim 11, wherein the timing recovery section is adapted to derive a symbol timing reference using a receiver bit arrival rate.

16. (previously presented) The transceiver of claim 11, wherein the transmitter is adapted and controlled to transmit within a TDMA frame in accordance with a time-slot allocation scheme.

17-23. (canceled)

24. (currently amended) <u>A method for providing communication timing information from a control station, comprising:</u>

<u>generating a timing marker;</u>

<u>determining a control station timing delay; and</u>

<u>providing the timing marker and the control station timing delay in a message received by a remote user;</u>

<u>wherein the timing marker is a superframe marker, and</u>

<u>wherein the superframe marker is periodically provided in messages to the remote user at a first fixed interval, and</u>

~~The method of claim 22,~~ further comprising pulsing an inroute receiver at a time later than a time of the superframe marker pulse by a space timing offset interval.

25. (original) The method of claim 24, wherein the space timing offset interval is approximately equal to a maximum round-trip time from a furthest remote user plus two frame duration intervals.

26. (canceled)

27. (original) A method for transmitting a frame synchronized message, comprising: receiving a frame reference marker in a local receiver of one of a plurality of distributed user nodes;

timestamping the received frame reference marker with a local reception time;

receiving a control node timing differential at the local receiver;

correcting the local reception time by applying the control node timing differential and a local offset time;

determining a start time for a return channel frame using the corrected local reception time; and

transmitting a first message from one of the plurality of distributed user nodes during an assigned period within the return channel frame.

28. (previously presented) The method of claim 27, wherein correcting the local reception time includes applying a correction for satellite drift.

29. (original) The method of claim 27, wherein the control node timing differential is received after the received frame reference marker is timestamped with the local reception time.

30. (original) The method of claim 27, further comprising locally deriving a system symbol timing reference using a bit arrival rate in the local receiver.

31. (original) The method of claim 27, further comprising centrally receiving a plurality of different user messages, wherein each of the plurality of different user

messages is transmitted within the return channel frame in accordance with a time-slot allocation scheme.

32. (original) The method of claim 27, further comprising transmitting a second message from a different one of the plurality of distributed user nodes during a different assigned period within the return channel frame in accordance with a time-slot allocation scheme, wherein the different one of the plurality of distributed user nodes uses the frame reference marker to determine the different assigned period.

33. (original) A communication system for sharing return channel uplink timing information, comprising: a common symbol timing reference;

a first control station transmitting a first broadcast data stream in accordance with the common symbol timing reference, said first control station including a first delay tracker to determine a first transmission delay associated with the first control station;

said first broadcast data stream including a non-real time frame marker and a first transmission delay message;

a first receiver to receive the first broadcast data stream, said first receiver receiving the first delay message and timestamping the non-real time frame marker with a first local time of receipt;

a first timing recovery circuit to determine an upcoming real-time return channel frame start time by adjusting the first local time of receipt by the first transmission delay and a first receiver offset time; and

a first local transmitter to uplink a message in a predetermined time-slot after the real-time return channel frame start time.

34. (original) The communication system of claim 33, further comprising: a second control station transmitting a second broadcast data stream in accordance with the common symbol timing reference, said second control station including a second delay tracker to determine a second transmission delay associated with the second control station;

said second broadcast data stream including non-real time frame marker and a second delay message;

a second receiver to receive the second broadcast data stream, said second receiver receiving the second delay message and timestamping the non-real time frame marker with a second local time of receipt;

a second timing recovery circuit to determine real-time return channel frame start time by adjusting the second local time of receipt by the second transmission delay and a second receiver offset time; and

a second local transmitter to uplink a second user message in a different predetermined time-slot after the real-time return channel frame start time.

35. (original) The communication system of claim 33, wherein said first broadcast data stream is an asynchronous DVB transport stream.

36. (original) The communication system of claim 33, wherein said first broadcast data stream is encapsulated in an IP/DVr protocol layer.

37. (original) The communication system of claim 33, further comprising a communication satellite to relay the transmitted first broadcast data stream to the first receiver.

38. (previously presented) A method for sharing a set of TDMA channels between a plurality of uplink channels, comprising:

providing a non-real time system reference timing message to a remote user;

determining a control station timing delay;

calculating a message transport delay;

offsetting a local time reference from the non-real time system timing by the message transport delay and the control station timing delay;

determining a realtime TDMA transmit frame timing from the offset local time reference; and

transmitting uplink channel information in accordance with the realtime TDMA transmit frame timing and a TDMA time-sharing arrangement.

39. (original) The method of claim 38, further comprising receiving a frame marker message encapsulated in a layered transport stream.

40. (original) The method of claim 39, wherein said layered transport stream is an asynchronous DVB transport stream.

41. (original) The method of claim 38, wherein the non-real time system timing message is provided to a plurality of remote users.

42. (original) The method of claim 38, wherein the non-real time system reference timing message is provided to a plurality of remote users over more than one layered transport stream.